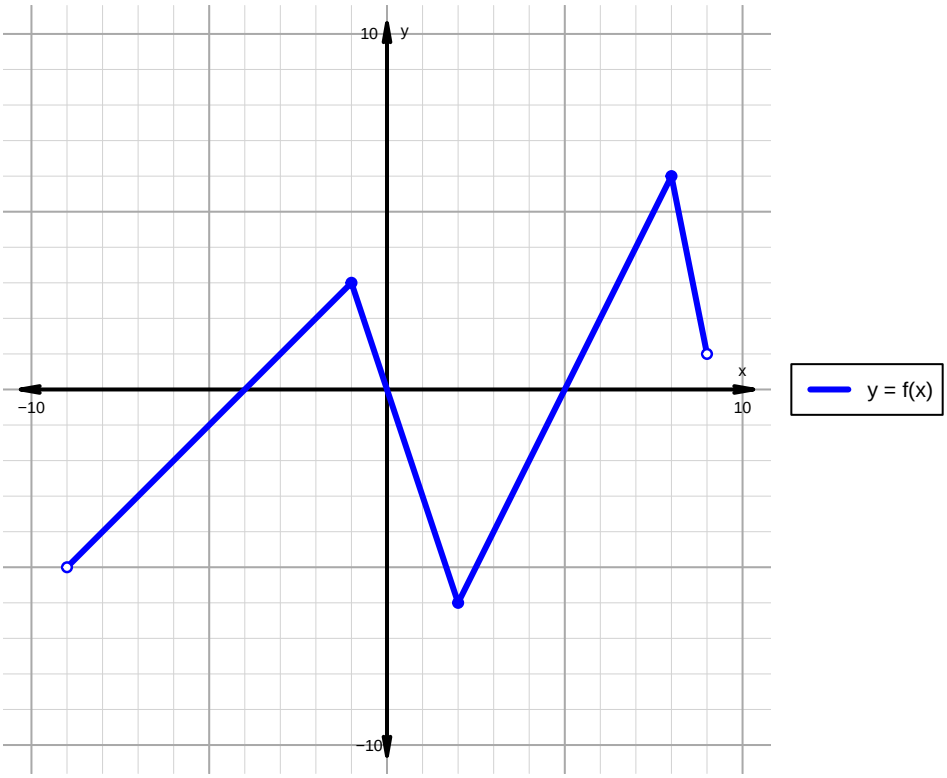
Name: Date:

Intervals, Transformations, and Slope Solution (version 19)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-4, 0) \cup (5, 9)$
Negative	$(-9, -4) \cup (0, 5)$
Increasing	$(-9, -1) \cup (2, 8)$
Decreasing	$(-1, 2) \cup (8, 9)$
Domain	$(-9, 9)$
Range	$(-6, 6)$

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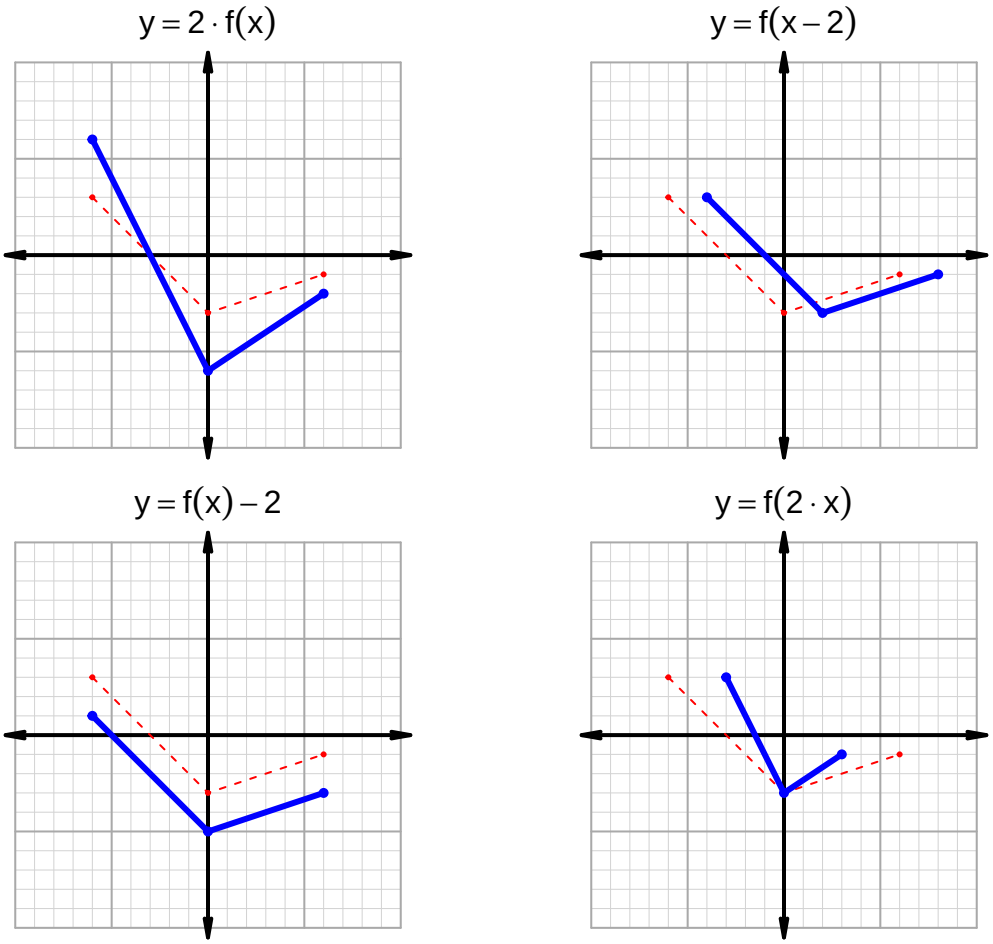
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. Please add the indicated transformed graphs indicated by the equations below using a solid line.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 55$ and $x_2 = 69$. Express your answer as a reduced fraction.

x	$g(x)$
55	73
66	55
69	66
73	69

$\frac{f(69)-f(55)}{69-55} = \frac{66-73}{69-55} = \frac{-7}{14}$

The greatest common factor of -7 and 14 is 7. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-1}{2}$$